

## RECENT DEVELOPMENTS IN TEXAS AND UNITED STATES ENERGY LAW

I.	INTRODUCTION .....	131
II.	RECENT DEVELOPMENTS IN TEXAS ENERGY LAW .....	132
	A. Texas Oil, Gas, and Energy Case Summaries .....	132
	B. <i>Lesley v. Veterans Land Board</i> : Revisiting the Scope of the Duty Owed by Executive Mineral Interest Owners to Non-Executive Mineral Interest Owners.....	138
	C. If You Build It, They Will Come: The Texas Offshore Carbon Repository and Its Role in the Future of Carbon- Based Energy .....	143
III.	RECENT DEVELOPMENTS IN UNITED STATES ENERGY LAW .....	152
	A. Federal Oil, Gas, and Energy Case Summaries .....	152
	B. Advocating Autarky: A Flaw in Green Jobs Policy Proposals as they Pertain to Renewable Energy .....	155

### I. INTRODUCTION

This edition of *Recent Developments in Texas and United States Energy Law* is composed of selected discussions and articles regarding recent case law, legislation, and trends affecting the energy industry.<sup>1</sup> The first section focuses on Texas. It begins with short summaries of recent Texas appellate court decisions and contains two articles about new developments in Texas oil and gas law. Michael Nasi and Travis Wussow discuss the Texas legislature's creation of an offshore carbon repository and the legal challenges to the geologic sequestration of carbon dioxide. Davin McGinnis and Olga Kobzar examine how the Texas Supreme Court may use *Lesley v. Veterans Land Board* as an opportunity to revisit the duty owed by executive mineral interest owners to non-executive mineral interest owners. The second section focuses on national issues. It includes two summaries of recent Fifth Circuit decisions and an article by William Bogart, Andrew Dorchak, Roger Meiners, and Andrew Morriss. Bogart and his co-authors argue that much green jobs literature contains anti-trade assumptions, which are contrary to economic theory and the experience of the world economy.

---

1. The content of the Recent Developments section is provided for general information purposes only. The case summaries and short articles may serve as a useful starting point in the legal research process but are not intended as a substitute for primary research of the laws of the jurisdictions discussed.

## II. RECENT DEVELOPMENTS IN TEXAS ENERGY LAW

### A. *Texas Oil, Gas, and Energy Case Summaries*

1. *Dynegy Midstream Services, Ltd. P'ship v. Apache Corp.*, 294 S.W.3d 164 (Tex. 2009).

*Issue: Does a natural gas processor have a duty to compensate a natural gas producer for gas that becomes "unaccounted-for" between production at the wellhead and sale when their contract bases payment on the amount of gas sold at the tailgate?*

In August 2009 the Texas Supreme Court held that, under percentage-of-proceeds contracts, a gas processor does not have to compensate a gas producer for "unaccounted-for" gas that is presumably lost during transport. The court found that the contracts at issue were unambiguous and that the producer assumed the risk of loss. In addition, since the processor had no obligation to compensate the producer for the "unaccounted-for" gas, there was no lost revenue to sue for under the New Mexico Unfair Practices Act ("NMUPA" or "the Act").<sup>2</sup>

Apache Corporation ("Apache") produces natural gas at wellheads in Texas and New Mexico. Apache had 18 similar gas-purchase contracts with Versado Gas Processors, LLC ("Versado") to process and sell the gas. The contracts transferred title to Versado at or near the wellheads. The gas was then transported from Apache's wellheads, through Versado's gathering system, to its processing plants. It was undisputed that some of the gas is used as fuel and lost due to leakage and flaring during transport. After processing the gas that does reach its plants, Versado sold the final marketable product, "residue gas," to third parties and paid Apache a portion of its profits.

Despite its admission that it was paid in full by Versado for "every molecule of gas" sold, Apache sought compensation from Versado for the "unaccounted-for" gas that disappeared between production at the wellheads and sale.<sup>3</sup> In reviewing Apache's claim, the court noted that the contracts expressly provided that Versado only had a duty to pay Apache a percentage of the net proceeds generated from the sale of residue gas at the tailgates. Moreover, no language in the contracts indicated that Versado was obliged to compensate Apache for leakage, flaring, or other gas loss, whether Versado could definitively explain discrepancies

---

2. N.M. STAT. §§ 57-12-1 to 57-12-24 (1978).

3. *Dynegy Midstream Servs., Ltd. P'ship v. Apache Corp.*, 294 S.W.3d 164, 165 (Tex. 2009).

between gas levels at the wellheads and tailgates or not. Thus, the court determined that Apache's breach of contract claim failed as a matter of law.

Apache's claim under the NMUPA was similarly rejected by the court. Apache argued that, per the Act, Versado should have provided more information to Apache regarding the disposition of the "unaccounted-for" gas. However, because Versado had no duty to compensate Apache for this gas, Apache did not suffer any harm from Versado's lack of records.

Finally, the court addressed whether Apache was entitled to compensation for the gas condensate that is removed at Versado's field compressor stations as the gas is transported from the wellheads to the tailgates. Versado requested a declaratory judgment that it owed Apache nothing for the condensate. After construing each of the contracts as a whole and examining the relevant provisions of each, the court concluded that none of the contracts required Versado to compensate Apache for the condensate and issued a judgment in favor of Versado.

2. Exxon Corp. v. Miesch, No. 05-1076, 2009 WL 795668 (Tex. Mar. 27, 2009), and Exxon Corp. v. Emerald Oil & Gas Co., No. 05-0729, 2009 WL 795760 (Tex. Mar. 27, 2009).

*a. Background*

As early as the 1950s Exxon Corporation's predecessor, Humble Oil and Refining Company, began acquiring mineral leases from the royalty owners in these suits (collectively, "Miesch"). The leases included an atypical 50% royalty obligation. During the 1970s Exxon attempted to renegotiate a lower royalty because profitability of the operations was declining. By 1987 the royalty owners requested that Exxon submit documentation showing that the field was depleted and unprofitable. In 1990 the royalty owners knew that Exxon planned to plug six active wells and demanded that Exxon abandon its plans or the royalty owners would sue for breach of lease and waste. Exxon had already begun plugging wells in 1989. In 1991 Exxon notified the royalty owners that it had completed its plugging operations.

In 1993 after the Exxon leases expired, Emerald Oil & Gas Company's ("Emerald") predecessor, Pace West Production, Ltd., entered into a mineral lease with the royalty owners. While trying to reenter the plugged wells, Emerald encountered numerous problems, including "junk" in the holes and cut casings. In June 1994 Emerald notified the royalty owners of these problems. In January 1995 Emerald met with the royalty owners for an extended discussion of the damage.

In July 1996 Emerald sued Exxon on multiple grounds, including breach of duty to plug the wells properly, breach of duty to avoid committing waste, negligence per se in violating the Natural Resources Code and Commission Regulations, tortious interference with economic opportunity, negligent misrepresentation, and fraud. In August and September 1996 the royalty owners intervened with similar claims, and in 1999 they amended their petition to add breach of lease.

Prior to trial, the trial court granted Exxon's motion for summary judgment and severed Emerald's claims for breach of duty to plug the wells properly, breach of duty to avoid committing waste, and negligence per se. The Corpus Christi Court of Appeals reversed the summary judgment ruling and severance order and remanded the claims to the trial court.

The trial court entered a directed verdict for Exxon on Emerald's remaining claims and all of the royalty owners' claims except breach of lease and waste. The jury found in favor of the royalty owners on the causes of actions for breach of lease and waste. The court of appeals affirmed the jury verdict and reversed and remanded the directed verdict.

*b. Exxon Corp. v. Miesch*, No. 05-1076, 2009 WL 795668.

In *Exxon Corporation v. Miesch*, the Texas Supreme Court reviewed the appellate court's affirmation of the jury verdict for the royalty owners as well as its reversal of the directed verdict against the royalty owners and Emerald.

As a preliminary matter, the court acknowledged that a two-year statute of limitations applied to all of the claims except breach of lease and fraud. The court explained that the royalty owners' waste claim should have been brought within two years of September 1990, when the royalty owners first threatened legal action against Exxon for plugging the wells. In addition, the royalty owners' other claims (with the exceptions of breach of lease and fraud) and Emerald's claims (with the exception of fraud) should have been brought within two years of Emerald's June 1994 letter to the royalty owners regarding damage to the wells. Thus, the court rendered judgment on those claims in favor of Exxon because they were time-barred.

The court went on to consider the royalty owners' breach of lease claim at length. The court defined Exxon's obligation to fully develop the tract as a duty to drill a certain number of wells per acre, not to produce and extract all of the profitable reserves in an area. Since the only testimony offered by the royalty owners regarded production from the wells and there was no proof that Exxon drilled fewer wells than were required by the lease, the court reversed the jury verdict and rendered judgment in favor of Exxon.

The last issue the court addressed was fraud, which has a four-year statute of limitations. Emerald and the royalty owners claimed that Exxon's plugging reports filed with the Railroad Commission of Texas ("RRC") were fraudulent since future investors (i.e., potential lessees) would rely on them for calculating the costs of production. Exxon argued that the sole purpose of such reports is to prevent pollution—they are not intended for future investors' to rely on. Exxon also argued that Emerald and the royalty owners were improperly asking the court to reduce the "intent-to-induce reliance" element of fraud to mere foreseeability.

The court found that plugging reports are meant for more than merely pollution control. For instance, the RRC has stated that one of the reasons for the reporting requirements is to allow commercial reentry. Thus, the court rejected Exxon's first argument against the fraud claim. However, the court agreed that the "intent-to-induce reliance" standard requires more proof than a general industry practice of relying on plugging reports. Because there was some evidence that the specific parties in this case were interested in reusing the plugged wells, the court overruled the trial court's directed verdict and remanded the case to the trial court for further proceedings.

c. *Exxon Corp. v. Emerald Oil & Gas Co.*, No. 05-0729, 2009 WL 795760.

In *Exxon Corp. v. Emerald Oil & Gas Co.*, the Texas Supreme Court reviewed the appellate court's reversal of the trial court's grant of summary judgment against Emerald's claims for breach of duty to plug the wells properly, breach of duty to avoid committing waste, and negligence per se. The court looked to section 85.321 of the Natural Resources Code<sup>4</sup> and determined that Emerald lacked the standing to bring those claims.

Section 85.321 creates a cause of action for parties whose property is damaged by another party's violations of state conservation laws or RRC rules.<sup>5</sup> The court implied that this includes violations of the plugging rule. The court then discussed how causes of action are created when injury is committed and how causes of action can only pass to subsequent purchasers of property through express assignment. Since Exxon's violations of section 85.321 occurred before Emerald leased the mineral rights, and Emerald's lease contained no express provision regarding the royalty owners' causes of action against Exxon, the court concluded that Emerald had no standing to sue Exxon and rendered judgment in favor of Exxon.

---

4. TEX. NAT. RES. CODE ANN. § 85.321 (Vernon 2007).

5. *Id.*

3. Cambridge Production, Inc. v. Geodyne Nominee Corp., 292 S.W.3d 725 (Tex. App.—Amarillo 2009, pet. filed).

*Issue: Can the doctrine of quasi-estoppel be applied in order to preclude a lessor from accepting royalties over a period of time and then subsequently claiming that the lease terminated during that period?*

In the summer of 2009, the Amarillo Court of Appeals held that the doctrine of quasi-estoppel applies to lease termination claims in which the lessor received the benefit of royalties during the contested period. This may prove to be a beneficial ruling for certain lessees. It should be noted, however, that a timely petition for review has been filed with the Texas Supreme Court.

In the late 1970s Geodyne Nominee Corporation (“Geodyne”) executed 44 oil and gas leases (“the Section 33 leases”) with mineral interest owners in Hemphill County, Texas. The primary term for the Section 33 leases was five years, which expired on July 18, 1983. There was no production of oil, gas, or other minerals from Section 33 during the primary term. However, the leases permitted pooling to obtain production, and, in January 1980, the Section 33 leases were pooled with Section 39 leases to form the Prater unit. Since then, the Prater No. 1 well has continuously produced from an interval between 14,364 feet and 14,372 feet. When the Prater unit was first formed, the deed records erroneously designated the depth of production at 14,634 feet to 14,929 feet. Geodyne did not file an amended unit designation with the correct depth of production until March 18, 1999.

In early 1999 Cambridge Production, Inc. (“Cambridge”) obtained new top leases from the Section 33 mineral interest owners. Shortly thereafter, Cambridge sought termination of Geodyne’s Section 33 leases and the Prater unit because there was no production from Section 33 or from the depth described in the unit designation. In response, Geodyne asserted the affirmative defense of quasi-estoppel.

The court accepted Geodyne’s quasi-estoppel defense and affirmed the lower court’s grant of summary judgment in favor of Geodyne. In discussing quasi-estoppel, the court noted that while equitable estoppel requires proof of a false statement or detrimental reliance, quasi-estoppel does not have such requirements, but instead “precludes a party from accepting the benefits of a transaction and then taking a subsequent inconsistent position to avoid corresponding obligations or effects.”<sup>6</sup>

Because Cambridge had no rights to Section 33 except per its top leases, Cambridge could not seek to terminate Geodyne’s Section 33 leases or the Prater unit unless the Section 33 mineral interest owners had

---

6. Cambridge Prod., Inc. v. Geodyne Nominee Corp., 292 S.W.3d 725, 732 (Tex. App.—Amarillo 2009, pet filed).

No. 1]

## RECENT DEVELOPMENTS

137

the right to do so. However, the mineral interest owners would not have received royalties but for the pooling of Geodyne's Section 33 leases and the creation of the Prater unit. Therefore, the court reasoned that any efforts to terminate Geodyne's Section 33 leases and the Prater unit would be inconsistent with the benefits previously accepted by the mineral interest owners and were barred by quasi-estoppel.

Furthermore, the court determined that Cambridge was not a bona fide purchaser in connection with the new Section 33 leases. The court found that Cambridge had constructive notice of Geodyne's Section 33 leases because it could have made reasonable inquiry into the basis upon which Geodyne was operating a well on the Prater unit and paying royalties to the mineral interest owners from production on the unit.

**B. *LESLEY V. VETERANS LAND BOARD*:  
REVISITING THE SCOPE OF THE DUTY OWED BY  
EXECUTIVE MINERAL INTEREST OWNERS TO  
NON-EXECUTIVE MINERAL INTEREST OWNERS**

D. DAVIN MCGINNIS\* AND OLGA KOBZAR\*\*

I.	A HISTORICAL PERSPECTIVE: THE SUPREME COURT DEFINES THE DUTY OWED BY THE EXECUTIVE RIGHTS HOLDER .....	138
	A. <i>Manges v. Guerra</i> .....	138
	B. <i>In re Bass</i> .....	139
II.	<i>LESLEY V. VETERANS LAND BOARD</i> .....	139
	A. Background .....	140
	B. The Trial Court .....	140
	C. The Court of Appeals .....	141
III.	THE FUTURE OF <i>LESLEY</i> AND THE EXECUTIVE RIGHTS HOLDER'S DUTY .....	142

The relationship between the executive rights holder and his non-executive rights holders is often a contentious one. As mineral owners lacking any ability to bring about the development or exploration of their interest, non-executive rights holders are in many ways at the mercy of the executive rights holder.

I. A HISTORICAL PERSPECTIVE: THE SUPREME COURT DEFINES THE  
DUTY OWED BY THE EXECUTIVE RIGHTS HOLDER

*A. Manges v. Guerra*

Perhaps recognizing the tremendous control that the executive rights holder has over the non-executive mineral interest owner, the Texas

---

\* Davin McGinnis is a partner at Scott, Douglass & McConnico, L.L.P. in Austin, Texas. Mr. McGinnis received his J.D., with honors, from The University of Texas School of Law in 2000 and a B.A. in Philosophy, with honors, in 1997. He is a full-time oil and gas lawyer, with an emphasis in oil and gas litigation, oil and gas business advice, and administrative law, particularly in front of the Oil and Gas Division of the Texas Railroad Commission and the Texas General Land Office. Mr. McGinnis is certified in Oil, Gas, and Mineral Law by the Texas Board of Legal Specialization and has presented numerous papers and speeches in the area of oil and gas law.

\*\* Olga Kobzar will receive her J.D. from The University of Texas School of Law in 2010. She received her Bachelor's degree in Political Science, *summa cum laude*, and her M.B.A. in Marketing, with honors, from Texas Tech University. During law school, she served as the Managing Editor 2009-2010 and as Director of Submissions 2008-2009 for the TEXAS JOURNAL OF OIL, GAS, AND ENERGY LAW.

Supreme Court long ago made clear that the holder of the executive rights owes a duty of the “utmost good faith” to the non-executive interest owner. In the seminal case of *Manges v. Guerra* the Supreme Court reasoned that the duty of “utmost good faith” arose “from the relationship [between the executive rights holder and the non-executive interest owner] and not from the express or implied terms of the contract or deed,” which severed the executive rights from the non-executive rights.<sup>7</sup> In applying this standard, the *Manges* court held that the executive rights holder must “acquire for the non-executive every benefit that he exacts for himself.”<sup>8</sup>

### B. *In re Bass*

For nearly 20 years, the *Manges* court appeared to have settled any question as to the scope of the duty owed by an executive rights owner to the non-executive rights holder. However, the 2003 case of *In re Bass*—a mandamus opinion addressing a trade secret discovery fight—suggested that the scope of the executive’s duty was somewhat more limited than had been provided for in *Manges*.<sup>9</sup> *Bass* opined that the executive *did not* owe the non-executive any duty to (a) develop or (b) lease the minerals.<sup>10</sup> However, the *Bass* court’s statement as to the scope of the executive mineral owner’s duties was ancillary to the actual issue before the court: whether the non-participating royalty owners were entitled to obtain the mineral fee (executive) owner’s seismic data.<sup>11</sup> Consequently, any interpretation that the *Bass* opinion changed or narrowed the scope of the executive owners’ duty from that set forth in *Manges* should be met with caution.

## II. *LESLEY V. VETERANS LAND BOARD*

In 2009 the Eastland Court of Appeals, applying a narrow reading to the Supreme Court’s reasoning in *Bass*, handed down an opinion that, if upheld, will serve to further limit the duty owed by the executive. In the case of *Lesley v. Veterans Land Board* the Eastland Court declined to find that the executive rights holder had breached any duty to its non-executive rights holder when it imposed a restrictive covenant upon the mineral estate that prohibited oil and gas exploration and development.<sup>12</sup> The Eastland Court, noting that “no breach of fiduciary duty can occur until the executive exercises the executive rights,” held that no breach

---

7. 673 S.W.2d 180, 183 (Tex. 1984).

8. *Id.*

9. 113 S.W.3d 735, 744 (Tex. 2003).

10. *Id.*

11. *Id.* at 737.

12. 281 S.W.3d 602, 620 (Tex. App.—Eastland 2009, pet. filed).

occurred because the imposition of the restrictive covenant was not an *exercise* of executive rights.<sup>13</sup>

### A. Background

*Lesley* involved approximately 4,100 acres of land in Erath County, Texas.<sup>14</sup> In 1998 Bluegreen Southwest One, LP (“Bluegreen”) acquired the surface estate as well as the executive mineral rights to the 4,100 acres and began developing the land into the Mountain Lakes Development.<sup>15</sup> One of Bluegreen’s first steps in undertaking the development was to draw up and record a declaration of covenants, conditions, and restrictions (the “Declarations of Covenants”).<sup>16</sup> Relevant here is the use restriction set out in Section 3.12 of the Declarations of Covenants, which provided as follows: “Section 3.12 *Mineral Development*. No commercial oil drilling, oil development operations, oil refining, quarrying, or mining operation of any kind shall be permitted. No derrick or other structures designed for the use of boring or oil or natural gas shall be erected, maintained, or permitted upon any Tract.”<sup>17</sup>

Significantly, Section 9.02 of the Declarations of Covenants provided that: “this Declaration may be amended or changed, in whole or in part, at any time by the written agreement or signed ballot of two-thirds (2/3rds) of the Owners (including the Developer) entitled to vote.”<sup>18</sup>

After recording the Declarations of Covenants, Bluegreen subdivided the acreage interest (both surface interest and executive mineral interest) into approximately 1,700 separate homeowner tracts.<sup>19</sup>

Evidence in the summary judgment record established that the executive mineral owners had been approached by would-be oil and gas lessees interested in leasing the minerals underlying the 4,100-acre subdivision, but that such inquiries had been frustrated by the restrictive covenant.<sup>20</sup> Evidence was also submitted estimating the value of the minerals underlying the 4,100 acres in the hundreds of millions of dollars (“as much as \$610 million”).<sup>21</sup>

### B. The Trial Court

The non-executive mineral interest owners brought suit, alleging, among other things, that Bluegreen had breached duties owed to the non-

---

13. *Id.* at 618-19.

14. *Id.* at 608.

15. *Id.* at 608-09.

16. *Id.*

17. *Id.* at 609.

18. *Id.*

19. *Id.*

20. Petition for Review at 2-3, *Lesley v. Veterans Land Board*, No. 09-0306 (Tex. 2009).

21. *Id.* at 2.

executive mineral owners when it subjected the entire development to the “no mineral development” deed restriction and when it refused to lease the minerals when it was given an opportunity to do so.<sup>22</sup> The trial court heard and ruled upon numerous summary judgment motions addressing various issues as to title, including the question of whether Bluegreen had breached duties owed to the non-executive mineral owners.<sup>23</sup> Relevant here, the court found that Bluegreen had retained the executive rights and made the following declarations concerning the alleged breaches by Bluegreen of duties owed to the non-executive mineral owners:

The Court DECLARES that Bluegreen, as owner of the Leasing Rights [i.e., the executive rights], breached the Duty to Lease by: entering into a Deed of Trust burdening the Leasing Rights; creating and recording the Declarations of Covenants[;] . . . and failing to lease the Plaintiffs’ minerals pertaining to the Subject Land when there was opportunity to do so.<sup>24</sup>

The trial court further found that the Declarations of Covenants were unenforceable and that the non-executive mineral interest owners had a right to “self-exploration or self-development.”<sup>25</sup>

### C. *The Court of Appeals*

The Eastland Court of Appeals reversed the trial court, finding that (1) the executive rights had been conveyed by Bluegreen to each of the 1,700 lot owners; and (2) Bluegreen had not breached any duty owed to the non-executive mineral owners by imposing the restrictive “no mineral development” covenant before subdividing the property, or by failing to lease the non-executive mineral owners interests.<sup>26</sup> In reaching its decision, the court purported to follow *Manges* and *Bass*, stating that “a breach of fiduciary duty occurs if (1) the executive exercises the executive rights, (2) the executive acquires benefits from the minerals for himself by exercising the executive rights, and (3) the executive fails to acquire every benefit for the non-executive mineral owners that he acquired for himself.”<sup>27</sup> Even though the value of the minerals was essentially destroyed by Bluegreen’s restrictive covenant prohibiting mineral development and its refusal to lease the minerals, the Eastland Court held that Bluegreen did not breach any duty to the non-executive rights owners because it did not actually *exercise* its executive rights

---

22. *Lesley*, 281 S.W.3d at 609.

23. *Id.*

24. *Id.* at 612.

25. *Id.* at 613.

26. *Id.* at 620, 628.

27. *Id.* at 619.

when it imposed the restrictive covenant.<sup>28</sup> The imposition of the restrictive covenant, the court reasoned, simply “showed that Bluegreen would not be exercising the executive rights.”<sup>29</sup>

### III. THE FUTURE OF *LESLEY* AND THE EXECUTIVE RIGHTS HOLDER’S DUTY

The *Lesley* opinion is now on appeal to the Texas Supreme Court and presents the court with an opportunity to affirm the standard set forth in *Manges* as well as address several questions that have arisen out of *Lesley*’s somewhat unique set of facts.<sup>30</sup>

Does the executive rights holder’s duty of utmost good faith apply only to instances in which the executive owner actually executes an oil and gas lease? Such a narrow reading would give executive rights holders (such as Bluegreen) *carte blanche* to take action for their own benefit, which might substantially impair (or even destroy) the value of the non-executive mineral interest by foreclosing, in perpetuity, any future development of the mineral estate.

Does the executive rights holder’s duty apply more broadly, imposing an affirmative obligation to lease the non-executive’s minerals when a prudent mineral owner, acting in his own self-interest, would do so? Holding the executive rights holder to this standard may impair the traditional right of the executive owner to exercise substantial discretion in dealing with the mineral estate (subject to the prohibition on obtaining benefits for itself not shared with the non-executive owner).

Or does the scope of the duty fall somewhere in between, prohibiting the executive from taking any *affirmative* acts affecting the mineral estate that result in benefits to itself which are not shared equally by (or that are obtained at the expense of) the non-executive mineral owner?

In clarifying the scope of the executive owners’ duty, as applied to the facts in *Lesley*, the court must strike a balance between maintaining the executive owners’ discretion to deal with the minerals and protecting non-executive mineral owners from potential abuses of that discretion.

---

28. *Id.*

29. *Id.*

30. As of the date of publication, the court has not granted the non-executive rights holders’ petition for review.

**C. IF YOU BUILD IT, THEY WILL COME:  
THE TEXAS OFFSHORE CARBON REPOSITORY AND  
ITS ROLE IN THE FUTURE OF CARBON-BASED ENERGY**

MICHAEL J. NASI\* & TRAVIS W. WUSSOW\*\*

I.	INTRODUCTION .....	143
II.	LEGAL CHALLENGES TO GEOLOGIC SEQUESTRATION OF CARBON DIOXIDE .....	146
III.	H.B. 1796 AND THE TEXAS OFFSHORE CARBON REPOSITORY ..	148
IV.	THE TEXAS OFFSHORE CARBON REPOSITORY'S ROLE IN THE FUTURE OF CARBON-BASED ENERGY .....	149

I. INTRODUCTION

Regulation limiting the amount of carbon dioxide and other greenhouse gases (“GHGs”) that may be emitted into the atmosphere looms large on the federal and international stages. The U.S. House of Representatives passed, by a razor-thin 219–212 margin, the American Clean Energy and Security Act of 2009,<sup>31</sup> and the U.S. Senate is now considering a similar version of the bill sponsored by Senator John Kerry (D–Mass.) and Senator Barbara Boxer (D–Cal.).<sup>32</sup> This marks the first time a major GHG cap-and-trade proposal has passed either chamber.<sup>33</sup> At the same time, the U.S. Environmental Protection Agency (“EPA”) is moving forward with regulating GHGs under its existing authority granted by the Clean Air Act.<sup>34</sup> If Congress does not pass comprehensive

---

\* Mike Nasi is a partner with the Environmental and Legislative Affairs Practice Group in the Austin office of Jackson Walker L.L.P. and heads the firm’s Climate Change and Carbon Management practice. He is also a part of the Energy Practice Group and is involved in major energy developments ranging from renewable electric power and fuels to coal-based, gas-fired, and nuclear power projects. Mr. Nasi practices before the Texas Commission on Environmental Quality, the Railroad Commission of Texas, the Environmental Protection Agency, and the Texas Legislature. He is the Secretary of the State Bar of Texas Environmental and Natural Resources Law Section (ENRLS). Mr. Nasi received his undergraduate degree from The University of Texas at Austin and his J.D. from the University of Houston.

\*\* Travis Wussow is a member of the Environmental and Legislative Practice Group in the Austin office of Jackson Walker L.L.P. His practice focuses on administrative and regulatory issues before the Texas Commission on Environmental Quality, the Railroad Commission of Texas, and the U.S. Environmental Protection Agency. He earned his B.B.A. from The University of Texas at Austin. He earned his J.D., with high honors, from The University of Texas School of Law, where he was a member of the Order of the Coif and an Articles Editor for the TEXAS LAW REVIEW.

31. John M. Broder, *House Passes Bill to Address Threat of Climate Change*, N.Y. TIMES, June 26, 2009, at A1.

32. Juliet Eilperin, *Senators Ready a Bill on Greenhouse Gases: Cuts Deeper than House’s, Carbon Offsets Cheaper*, WASH. POST, Sept. 30, 2009, at A03.

33. Broder, *supra* note 1, at A1.

34. Siobhan Hughes & Ian Talley, *EPA Proposes Tough Greenhouse-Gas Rules for Big*

climate change legislation, the EPA is expected to finalize regulations limiting GHG emissions under the Clean Air Act in March 2010.<sup>35</sup>

All signs are pointing to a carbon-constrained economy in the near future. This raises a difficult and pressing question: Where will the energy the American economy depends on come from? Although some energy economists contend that renewable energy will be the most important energy in the twenty-first century,<sup>36</sup> most analysts agree that fossil fuels will be a significant component of the energy mix for decades to come and will only be phased out as baseload renewable energy systems are developed and commercialized.<sup>37</sup>

The biggest issue is coal. Coal currently provides half of U.S. electricity generation, is a widely abundant domestic natural resource in the U.S., and has relatively stable prices.<sup>38</sup> On the other hand, coal emits more carbon dioxide than any other fossil fuel.<sup>39</sup> In a carbon-constrained economy, either by cap-and-trade or command-and-control regulation, coal's future depends on the ability of utilities to extract and sequester the carbon dioxide produced during the generation of electricity from coal and other fossil fuels.

The development of technology to accomplish large-scale carbon capture is underway. Although commercialization is at least 10 or 20 years away, pilot-scale carbon capture projects are being launched in the United States and abroad. There are a number of different technologies competing to be the most efficient and cost-effective. These approaches capture carbon dioxide both before and after combustion. The most prominent pre-combustion capture technology is utilized in conjunction with gasification, which extracts methane from the solid fossil fuel (i.e., coal or petroleum coke) and creates a synthesis gas very similar to natural gas. On the post-combustion side, several technologies are

---

*Industries*, WALL ST. J., Oct. 1, 2009, at A5.

35. Robin Bravender, *EPA Air Chief Offers "No Apologies" for Greenhouse-Gas Permitting Rule*, GREENWIRE, Oct. 7, 2009, available at <http://www.eenews.net/Greenwire/2009/10/07/archive/3?terms=no+apologies>.

36. Joseph Romm, *The Technology that Will Save Humanity: The Solar Energy You Haven't Heard of Is the One Best Suited to Generate Clean Electricity*, SALON, Apr. 14, 2008, [http://www.salon.com/news/feature/2008/04/14/solar\\_electric\\_thermal/index.html](http://www.salon.com/news/feature/2008/04/14/solar_electric_thermal/index.html).

37. See ELEC. POWER RESEARCH INST., 2008 GENERATION ANNUAL OVERVIEW (2009), available at [http://my.epri.com/portal/server.pt?Abstract\\_id=00000000001018790](http://my.epri.com/portal/server.pt?Abstract_id=00000000001018790); ELEC. POWER RESEARCH INST., ADVANCED COAL POWER SYSTEMS WITH CO<sub>2</sub> CAPTURE: EPRI'S COAL FLEET FOR TOMORROW VISION (2008), available at [http://my.epri.com/portal/server.pt?Abstract\\_id=00000000001016877](http://my.epri.com/portal/server.pt?Abstract_id=00000000001016877); STEVEN SPECKER ET AL., THE POTENTIAL GROWING ROLE OF POST-COMBUSTION CO<sub>2</sub> CAPTURE RETROFITS IN EARLY COMMERCIAL APPLICATIONS OF CCS TO COAL-FIRED POWER PLANTS (2009), available at [http://my.epri.com/portal/server.pt?Abstract\\_id=00000000001019552](http://my.epri.com/portal/server.pt?Abstract_id=00000000001019552).

38. Fred Freme, Energy Info. Admin., U.S. Coal Supply and Demand: 2008 Review 1, 8 (2009), available at [http://www.eia.doe.gov/cneaf/coal/page/special/article\\_dc.pdf](http://www.eia.doe.gov/cneaf/coal/page/special/article_dc.pdf).

39. B.D. Hong & E.R. Slatick, *Carbon Dioxide Emission Factor for Coal*, Q. COAL REPORT, Jan.-Apr. 1994, at 1, available at [http://www.eia.doe.gov/cneaf/coal/quarterly/co2\\_article/co2.html](http://www.eia.doe.gov/cneaf/coal/quarterly/co2_article/co2.html).

promising, most of which use an amine solution to extract the carbon dioxide from the facility's flue gas.

The other half of the technological challenge of coal utilization is sequestration. Generally, carbon sequestration means geologic sequestration, or carbon injection of carbon dioxide deep into underground rock formations. Although other carbon dioxide sequestration methods have been suggested—such as agricultural sequestration, sequestration as a part of algae production, and chemical conversion of carbon dioxide into carbonate minerals—these methods are not yet capable of sequestering carbon on the scale that will be needed by the coal-fired utility industry.

However, geologic sequestration is not as simple as drilling a well and pumping carbon dioxide into the earth. Specific geologic conditions are required for sequestration to be possible: The target rock formation must be contained with impervious hard rock or clays to prevent the injected carbon dioxide from making its way to the surface. The overlying formations must be free of faults that could provide a conduit for the carbon dioxide to migrate to different strata and either escape or cause pollution of fresh groundwater supplies.<sup>40</sup> These geologic conditions do not exist everywhere; for instance, some areas in the Midwest and Southeast have few or no geologic sequestration opportunities. In fact, the most promising geologic sequestration candidate sites are concentrated in a few areas. One of these areas is Texas.

Geologic sequestration of carbon dioxide has been occurring in Texas since the 1970s in conjunction with enhanced oil recovery operations in the Permian Basin.<sup>41</sup> Candidate sites for geologic sequestration exist throughout Texas, with a number of sites concentrated along the Gulf Coast and in the Gulf of Mexico.<sup>42</sup> In fact, the Gulf of Mexico is home to some of the best geology for geologic carbon sequestration in the world.<sup>43</sup> This rich and valuable natural resource—pore space—is a big opportunity

---

40. See REBECCA C. SMYTH ET AL., POTENTIAL SINKS FOR GEOLOGIC STORAGE OF CARBON DIOXIDE GENERATED IN THE CAROLINAS 11 (2007), available at [http://www.beg.utexas.edu/gccc/pubs\\_presentations/CarolinasSummary\\_16April07.pdf](http://www.beg.utexas.edu/gccc/pubs_presentations/CarolinasSummary_16April07.pdf).

41. See Mark H. Holtz et al., *Moving Permian Basin Technology to the Gulf Coast: The Geologic Distribution of CO<sub>2</sub> EOR Potential in Gulf Coast Reservoirs*, in UNCONVENTIONAL RESERVOIRS TECHNOLOGY AND STRATEGIES: ALTERNATIVE PERSPECTIVES FOR THE PERMIAN BASIN (Peter Lufholm & Denise Cox eds., 2005), available at <http://www.beg.utexas.edu/gccc/bookshelf/Final%20Papers/05-02-Final.pdf>. Enhanced oil recovery with carbon dioxide, also known as carbon dioxide “flooding,” is a process by which high-pressure carbon dioxide is injected into a depleted oil field to increase oil production. As the carbon dioxide moves through the oil-bearing rock formation, trapped oil molecules are released and brought to the surface. *Id.*

42. *Id.*

43. *Id.*; see also JEAN-PHILIPPE NICOT ET AL., AREA OF REVIEW: HOW LARGE IS LARGE ENOUGH FOR CARBON STORAGE? 2 (2006), available at [http://www.beg.utexas.edu/gccc/pubs\\_presentations/UIC\\_Nicot.pdf](http://www.beg.utexas.edu/gccc/pubs_presentations/UIC_Nicot.pdf).

for Texas and sets the stage for the development of a regime to exploit this resource.

This regime, the Texas Offshore Carbon Repository, was created by the 81st Texas Legislature.<sup>44</sup> In a carbon-constrained economy, the Repository will be able to accept carbon dioxide generated in places throughout the country without the ability to geologically sequester carbon dioxide locally. This may solve the geologic problem, but the development of a robust carbon capture and sequestration regime will require overcoming not just geological problems—there are legal difficulties as well.

## II. LEGAL CHALLENGES TO GEOLOGIC SEQUESTRATION OF CARBON DIOXIDE

Several legal issues will make geologic sequestration of carbon dioxide difficult in the short term, although not impossible. First, in some states, including Texas, there is uncertainty surrounding the ownership of the pore space into which the carbon dioxide is injected. Although most commentators generally agree that under existing Texas law a court would likely find that the pore space is owned by the surface estate,<sup>45</sup> there is some Texas case law that suggests the mineral estate owns the pore space even after the minerals have been extracted.<sup>46</sup> This issue is not an insurmountable obstacle to the commercial-scale development of carbon capture and sequestration, but uncertainty increases the project's cost, creates financing problems for new business, and dissuades would-be entrepreneurs from entering the market.

Second, there are issues surrounding long-term liability and ownership of the carbon dioxide once it has been geologically sequestered. The liability issues include the risk of carbon dioxide escaping from the formation and being released into the atmosphere and of pollution of

---

44. See Act of June 1, 2009, 81st Leg., R.S., ch. 1125, § 1, 2009 Tex. Gen. Laws 3100, 3100.

45. INTERSTATE OIL & GAS COMPACT COMM'N TASK FORCE ON CARBON CAPTURE AND GEOLOGIC STORAGE, STORAGE OF CARBON DIOXIDE IN GEOLOGIC STRUCTURES: A LEGAL AND REGULATORY GUIDE FOR STATES AND PROVINCES 17 (2007), available at <http://iogcc.publishpath.com/Websites/iogcc/PDFS/2008-CO2-Storage-Legal-and-Regulatory-Guide-for-States-Full-Report.pdf> [hereinafter INTERSTATE OIL & GAS]; see also *Emeny v. United States*, 412 F.2d 1319, 1323 (Ct. Cl. 1969) (applying Texas law and holding that the surface owners retain the right to the pore space and the right to exclude an operator storing natural gas in their pore space); *Humble Oil & Refining Co. v. West*, 508 S.W.2d 812, 815 (Tex. 1974) (citing *Emeny*, 412 F.2d 1319).

46. *Mapco, Inc. v. Carter*, 808 S.W.2d 262, 274 (Tex. App.—Beaumont 1991, writ granted), *rev'd in part*, 817 S.W.2d 686 (Tex. 1991) (holding that the mineral estate has the exclusive right to use the subsurface storage area—a cavern within a salt dome created by the mineral estate owner). According to the Interstate Oil and Gas Compact Commission's Task Force on Carbon Capture and Geologic Storage, "it is fair to conclude that in Texas, *Mapco* applies only when the storage space is created and comprised of a mineral," such as a salt dome, a point emphasized by the court. INTERSTATE OIL & GAS, *supra* note 15, at 17. *Mapco* is arguably inapplicable for most geologic sequestration activities because the storage space will be comprised of nonminerals. *Id.*

fresh groundwater resources, among other concerns. The insurance industry is currently developing a number of risk management products for operators.<sup>47</sup> However, the issues involved are highly complex from a technical perspective and present several novel financial and actuarial challenges.<sup>48</sup> These challenges are not overwhelming, and the insurance industry has dealt with such difficulties in the past, but policy premiums may initially be high and may not provide the coverage investors are seeking.

Third, there are problems with mineral trespass law. Underground sequestration of carbon dioxide requires a significant amount of land because the carbon dioxide dissipates widely through the underground formation into which it is injected. Even with large tracts of land, as high-pressure carbon dioxide is injected underground, a “pressure front” will form, which could possibly cause migration of carbon dioxide to a different strata or to a tract of land not leased to the carbon sequestration operator. Under Texas law, this would give rise to a trespass claim.<sup>49</sup> These problems are not novel; operators have been storing natural gas underground for decades in Texas and have found ways to manage these difficulties. However, these legal issues further complicate the already-complex landscape for carbon sequestration.

Finally, Texas law does not provide for forced unitization of tracts for leasing of pore space. For carbon sequestration operators, this creates a risk that one or more landowners will hold out and refuse to lease their pore space for the purpose of carbon dioxide injection. Again, these property rights issues have been navigated by the oil and gas industry as long as Texans have been extracting oil from the ground, but they do present challenges to the development of a robust carbon sequestration industry.

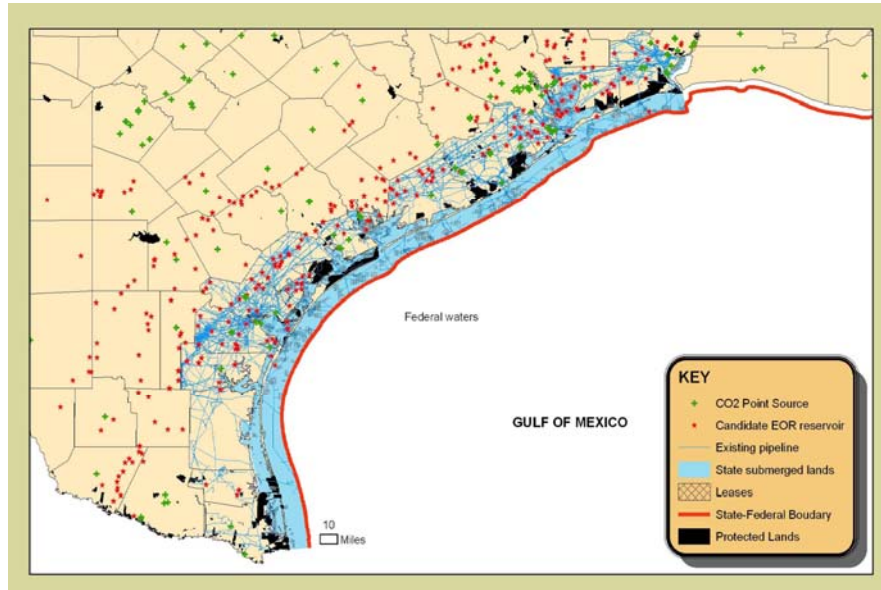
---

47. See, e.g., *Zurich Unveils Carbon Capture and Storage Insurance*, THE ECOLOGIST, Mar. 1, 2009, available at [http://www.theecologist.org/News/news\\_round\\_up/270827/zurich\\_unveils\\_carbon\\_capture\\_and\\_storage\\_insurance.html](http://www.theecologist.org/News/news_round_up/270827/zurich_unveils_carbon_capture_and_storage_insurance.html).

48. See Chiara Trabucchi & Lindene Patton, *Storing Carbon: Options for Liability Risk Management, Financial Responsibility*, DAILY ENV'T REPORT, Sept. 3, 2008, available at [http://www.indecon.com/iec\\_Web/Expertise/BNACCSFR\\_9032008.pdf](http://www.indecon.com/iec_Web/Expertise/BNACCSFR_9032008.pdf).

49. See *Gregg v. Delhi-Taylor Oil Corp.*, 162 Tex. 26, 34, 344 S.W.2d 411, 416 (1961) (“To constitute a trespass, ‘entry upon another’s land need not be in person, but may be made by causing or permitting a thing to cross a boundary of the premises.’”).

## III. H.B. 1796 AND THE TEXAS OFFSHORE CARBON REPOSITORY

Figure 1. State-Owned Submerged Lands<sup>50</sup>

The Texas Offshore Carbon Repository (“Repository”) was conceived by the Bureau of Economic Geology (“BEG”) at The University of Texas at Austin and championed by Texas Representative Warren Chisum (R–Pampa) to solve the geologic and legal challenges to geologic sequestration. The BEG’s efforts have placed the Texas Gulf Coast among the most studied potential sites for large-scale geologic sequestration. H.B. 1796, which created the Repository, requires the BEG to study state-owned submerged lands and propose sites that are suitable for geologic sequestration.<sup>51</sup>

The Repository will be located on submerged, state-owned land, solving the pore space ownership issue, because the State owns the mineral and subsurface estates. Additionally, the area covered by the Repository is sufficiently large to render negligible the risk of a carbon dioxide “pressure front” trespass and to make unitization unnecessary. Finally, the State has the ability to manage the long-term liability for the carbon dioxide storage because H.B. 1796 provides that the State assumes ownership of the carbon dioxide once injected into the Repository.<sup>52</sup> Because the Repository is offshore, the risks associated with

50. From Tinker, 2009; after Meckel, Bureau of Economic Geology, Gulf Coast Carbon Center.

51. Act of June 1, 2009, 81st Leg., R.S., ch. 1125, § 1, sec. 382.503, 2009 Tex. Gen. Laws 3100, 3100.

52. Act of June 1, 2009, 81st Leg., R.S., ch. 1125, § 1, secs. 382.507, 382.508, 2009 Tex. Gen.

migration or contamination of fresh groundwater resources are also much lower, if not nonexistent.

In short, the Repository will remove a significant portion of the uncertainty currently associated with geologic sequestration. This reduction of uncertainty and risk will provide space for investors to fund and finance leading-edge carbon capture and sequestration projects in Texas. The Repository will also drive down the cost of geologic sequestration because the State will not be forced to price in the long-term risks that operators in other parts of the United States will have to account for. And, as an added bonus, the Repository will increase funding for Texas's public schools because the Repository will be located on lands owned by the School Land Board of the General Land Office.<sup>53</sup>

#### IV. THE TEXAS OFFSHORE CARBON REPOSITORY'S ROLE IN THE FUTURE OF CARBON-BASED ENERGY

As important as the Repository will be in the long-term for the future of carbon-based energy, equally important are the intermediate-term impacts on oil production and expansion of coal-based electricity generation. These impacts are the subject of the remainder of this article.

In the short term, the carbon dioxide that is ultimately sequestered in the Repository will arrive by way of enhanced oil recovery ("EOR").<sup>54</sup> This is to say that in the near term, all or nearly all commercially sequestered carbon dioxide will be associated with an EOR operation. Because EOR provides operators with the ability to offset the cost of carbon capture and sequestration, geologic sequestration independent of EOR will only occur when all EOR opportunities within the vicinity of a carbon source have been exhausted.

EOR, however, will not provide a long-term solution. The United States only has 30 years of EOR opportunities,<sup>55</sup> compared to a 200–250-year supply of coal.<sup>56</sup> The coal-fired power plants that will be supplying the carbon dioxide for these EOR plays often have remaining useful lives in excess of 60 years. The operators of these facilities must soon decide whether to idle these plants and pursue other forms of electricity generation or invest in the technology to capture and sequester the carbon dioxide emitted from these facilities.

---

Laws 3100, 3101.

53. Act of June 1, 2009, 81st Leg., R.S., ch. 1125, § 1, sec. 382.504, 2009 Tex. Gen. Laws 3100, 3100.

54. Press Release, Clean Coal Technology Foundation of Texas, Foundation Salutes Legislative Victories as 81st Session Draws to a Close (June 2, 2009), available at <http://www.cctft.org/Docs/CCTFT%20-%20Session%20Wrap%206.2.09.pdf>.

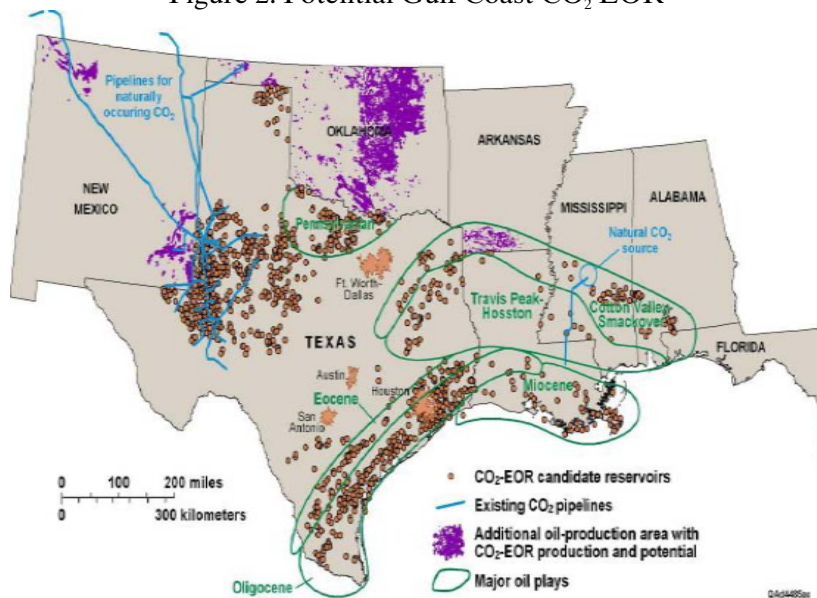
55. *Id.*

56. ENERGY INFO. ADMIN., INTERNATIONAL ENERGY OUTLOOK 2009, at 59 (2009), available at [http://www.eia.doe.gov/oiaf/ieo/pdf/0484\(2009\).pdf](http://www.eia.doe.gov/oiaf/ieo/pdf/0484(2009).pdf).

In this way, EOR and geologic sequestration are interdependent, necessary components of the long-term success of a robust carbon capture and sequestration regime. EOR will play a critical role in jump-starting the industry through subsidies created by the additional oil produced as a result of EOR activities. But investors today must be confident that geologic sequestration sites that can overcome the geologic, legal, and political barriers discussed above will be available tomorrow.

The Texas Offshore Carbon Repository is ideally situated for this interdependence. Potential major EOR plays line the Texas Gulf Coast, providing short transportation distances between the near-term and the long-term destinations for carbon dioxide. For instance, three potential petroleum coke gasification projects are located along the Texas Gulf Coast. These gasification projects would be able to either supply carbon dioxide for gasification or easily transport their carbon dioxide into the Repository. More important, however, is the fact that potential EOR sites are located throughout West Texas, South Texas, and the Gulf Coast. The network of pipelines that will be developed to move carbon dioxide for EOR purposes will be on a direct trajectory to the Texas Offshore Carbon Repository.

Figure 2. Potential Gulf Coast CO<sub>2</sub> EOR<sup>57</sup>



57. From Tinker, 2009; after Ambrose et al., Bureau of Economic Geology, Gulf Coast Carbon Center.

This stream of carbon dioxide headed to the Texas Gulf Coast will also provide the potential for international collaboration. Mexico possesses vast EOR opportunities but lacks reliable natural or anthropogenic sources of carbon dioxide. Petróleos Mexicanos (“Pemex”) has been studying its oil fields for EOR plays for many years but has not yet initiated any large-scale EOR activities. The steady supply of carbon dioxide near the Texas–Mexico border that will otherwise be injected in the Gulf of Mexico may persuade Pemex to further pursue these opportunities. This would offer major opportunities for U.S.- and Texas-based entities seeking to provide technical assistance for this project.

The Texas Offshore Carbon Repository is evidence of serious forward thinking by Texas policymakers and legislators. When and if regulation of carbon dioxide is enacted or promulgated, Texas will be ready and will attract significant direct and indirect benefits for decades to come.

## III. RECENT DEVELOPMENTS IN UNITED STATES ENERGY LAW

A. *Federal Oil, Gas, and Energy Case Summaries*

1. Doré Energy Corp. v. Prospective Investment & Trading Co., Ltd., 570 F.3d 219 (5th Cir. 2009).

*Issue: Under Louisiana law, is a settlement agreement that limits retained acreage to producing units breached when, at the end of the term described in the agreement, the lease owners refuse to release acreage not in producing units? If so, is partial cancellation of the lease the appropriate remedy?*

In May 2009 the Fifth Circuit held that whether the settlement agreement at issue had been breached turned on whether the parties made a good faith attempt to negotiate the formation of the retained producing units. The court remanded the case to the district court to make that determination. If the settlement agreement was breached, the court explained that lease cancellation is a disfavored remedy under Louisiana law.

In 1995 Doré Energy Corporation (“Doré”) purchased land and mineral rights in Cameron Parish, Louisiana. The land and mineral rights were subject to a lease that had been originally executed in 1927. Prospective Investment & Trading Co., Ltd. (“Prospective”) owned the lease. Doré filed suit in 2000 seeking to cancel the undeveloped portions of the lease. On January 28, 2002 the parties entered into a settlement agreement where Prospective agreed to release its interest in all of the land, except for three specific sections referred to as the “Retained Area.” At that time, there were 25 producing wells in the Retained Area, all of which had been assigned to producing units. The settlement agreement provided that all acreage in the Retained Area that was not in producing units three years after the effective date of the agreement would be released. Moreover, the agreement required that the parties attempt to negotiate, in good faith, the size and extent of the producing units before instituting proceedings before the Louisiana Commissioner of Conservation.

On January 28, 2005, exactly three years after the effective date of the settlement agreement, there were still 25 wells in the Retained Area. Each of the wells was producing, but only one was producing from the depth identified in its unit designation. The others had been re-completed in zones shallower than specified in their unit designations. In March 2005 Doré sent letters to Prospective demanding that they surrender all acreage not in producing units as required by the settlement agreement.

Prospective refused but offered to negotiate with Doré regarding the shape and configuration of the units surrounding the producing wells. Foregoing negotiations, Doré filed suit in Louisiana state court in September 2005 seeking termination of Doré's lease except with regard to the one unit that was producing from its designated depth. The case was removed to federal court where the district court cancelled Doré's lease except as to the one unit.

The Fifth Circuit found that the case turned on the provision of the settlement agreement that required the parties to engage in good faith negotiations regarding the size and extent of the retained producing units. The settlement agreement did not specify the time period in which negotiations had to take place. Under Louisiana law, when the period for performance of some provision in a contract is indefinite, the obligation must be performed "within a reasonable time."<sup>58</sup> Thus, the court reversed and remanded the case to the district court to determine whether Prospective breached the settlement agreement by not commencing negotiations "within a reasonable time." The court also advised that specific performance, rather than cancellation of the lease, was the proper remedy under Louisiana law if the settlement agreement had been breached.

2. *In re Lease Oil Litigation*, 570 F.3d 244 (5th Cir. 2009).

*Issue: Did the State of Texas fulfill the requirements to intervene in the distribution of leftover funds from an oil antitrust case settled in 1999? Specifically, was the State's intervention timely?*

In May 2009 the Fifth Circuit granted Texas's motion to intervene in a *cy pres* distribution. Although the State "should have acted sooner," the steps taken by the district court minimized any harm to the other parties, and Texas would have faced significant prejudice if its motion to intervene were denied.

The *cy pres* distribution at issue arose out of a class action that had spanned a decade. In the late 1990s the plaintiff class claimed that oil companies were not paying the fair market value of oil at the well. A settlement was reached, and settlement checks were distributed between October 1999 and September 2002. Because some members of the plaintiff class could not be located, the district court decided to use a *cy pres* distribution to transfer the unclaimed funds, \$4,638,283, to a third party. The selected recipient was an air-quality-monitoring project. Because all of the class members were involved in the oil industry, this environmental project was deemed to benefit them.

---

58. LA. CIV. CODE ANN. art. 1778 (2008).

The district court approved the *cy pres* distribution on December 12, 2007. On January 11, 2008 Texas filed a motion to intervene and a motion to reconsider. As the basis of its motions, the State argued that Texas law requires persons in possession of unclaimed property belonging to someone else to deliver it to the State Comptroller. The district court denied both of Texas's motions due to tardiness.

The Fifth Circuit reversed the district court's decision upon looking to the four-part intervention test in Federal Rule of Civil Procedure 24(a). The four parts of the intervention test are: (1) timeliness; (2) an interest relating to the action; (3) that the interest would be impaired or impeded by the case; and (4) that the interest is not adequately represented by existing parties.

With regard to timeliness, the court looked to the four-part test announced in *Stallworth v. Monsanto Co.*: (1) the length of time between the would-be intervenor's learning of his interest and his petition to intervene; (2) the extent of prejudice to existing parties from allowing late intervention; (3) the extent of prejudice to the would-be intervenor if the petition is denied; and (4) any unusual circumstances.<sup>59</sup> The court recognized that Texas should have attempted to intervene at the March 2006 hearing regarding the *cy pres* distribution. The State had taken an interest in the proceedings prior to the hearing, was regularly communicating with class counsel, and was aware that its interests were not being represented by class counsel. However, the latter factors turned the court in favor of Texas. With regard to the second factor, the district court set aside the unclaimed funds because it expected the State to intervene. Moreover, Texas's intervention would not harm the other parties because the State was only interested in challenging the unclaimed funds. And, with regard to the third factor, Texas stood to lose over \$4.6 million. If its motion were denied, the State's opportunity to appeal would have been extremely limited as non-parties are generally not permitted to appeal a ruling in which they did not participate.

The court then explored the fourth part of the intervention test. The court found that the State had a unique interest in the litigation as Texas law assigns interest that accrues from unclaimed property (like the funds at issue) to the State. As explained previously, this interest would be irrevocably harmed if Texas was not allowed to intervene. Further, none of the other parties represented the State's interests. Thus, because Texas satisfied the requirements for intervention, the court reversed the district court's denial of the state's motion to intervene.

---

59. 558 F.2d 257, 264-66 (5th Cir. 1977).

**B. ADVOCATING AUTARKY:  
A FLAW IN GREEN JOBS POLICY PROPOSALS AS THEY  
PERTAIN TO RENEWABLE ENERGY**

WILLIAM T. BOGART,\* ANDREW DORCHAK,\*\* ROGER E. MEINERS,\*\*\*  
AND ANDREW P. MORRIS\*\*\*\*

I.	CONCEPTUAL INTRODUCTION TO TRADE.....	156
II.	REJECTING COMPARATIVE ADVANTAGE.....	158

Trade has been part of human society since prehistoric times.<sup>60</sup> Changes in energy production and usage are not likely to change this fundamental characteristic of human civilization that predates modern energy sources. However, in the debate about environmental improvements resulting from a shift in the major sources of energy production, emphasis is often placed on preventing trade. For example, a report from the Apollo Alliance, a self-described “coalition of labor, business, community, and environmental leaders,” includes the recommendation that funding to support green energy investments should only be available if the components are produced in the U.S.<sup>61</sup> This recommendation is intended to promote self-sufficiency and reduce the extent of international trade.<sup>62</sup> This recommendation is fundamentally flawed because the assumption that autarky is preferable to trade is faulty.<sup>63</sup> This article introduces some economic concepts about trade in order to critically assess some of the “green jobs” advocacy literature.

---

\* Dean of Academic Affairs and Professor of Economics, York College of Pennsylvania; B.A. Rice University; A.M., Ph.D. (Economics) Princeton University.

\*\* Head of Reference and Foreign/International Law Specialist, Case Western Reserve University School of Law; Honors B.A. Xavier University; M.L.S. Kent State University.

\*\*\* John and Judy Goolsby Distinguished Professor of Economics and Law, University of Texas-Arlington; Senior Fellow, Property & Environment Research Center, Bozeman, Montana; B.A. Washington State University; M.A. University of Arizona; Ph.D. (Economics) Virginia Tech; J.D. University of Miami.

\*\*\*\* H. Ross & Helen Workman Professor of Law and Professor of Business, University of Illinois; Senior Scholar, Mercatus Center at George Mason University; Senior Fellow, Property & Environment Research Center, Bozeman, Montana; A.B. Princeton University; J.D., M.Pub.Aff. University of Texas; Ph.D. (Economics) Massachusetts Institute of Technology.

60. THE ARCHAEOLOGY OF MEDITERRANEAN PREHISTORY 27, 272 (Emma Blake & A. Bernard Knapp eds., 2005) (discussing evidence of trade in Neolithic times and Eastern Mediterranean trade in the Bronze Age).

61. APOLLO ALLIANCE, MAKE IT IN AMERICA: THE APOLLO GREEN MANUFACTURING ACTION PLAN 3 (2009), available at [http://apolloalliance.org/wp-content/uploads/2009/03/green\\_map\\_proposal031109.pdf](http://apolloalliance.org/wp-content/uploads/2009/03/green_map_proposal031109.pdf).

62. *Id.* at 6.

63. Andrew P. Morriss et al., *Green Jobs Myths*, 16 MO. ENVTL. L. & POL’Y REV. 326 (2009) (a comprehensive criticism of the economic agenda of prominent green jobs proponents).

## I. CONCEPTUAL INTRODUCTION TO TRADE

Trade is not remote; rather, it is a key part of modern society and our economy. However, the logic of trade can be difficult to grasp and frequently falls prey to nationalist chest-thumping by domestic special interests who garner political benefits by deriding trade with foreigners. Trade is often called free trade to recognize the fact that it occurs voluntarily—parties engage in trade because it is to their mutual benefit. Hence, restrictions on trade are limits on decisions of free actors.

An economy *imports* when its consumption of a good or service exceeds its production. An economy *exports* when its production exceeds consumption. This is true whether the economy is a nation, a state, a city, or even a person. When you use money earned as an attorney to hire a plumber, it is trade. You have exported legal services and imported plumbing services. Similarly, a city that produces solar panels and sells them to other cities is engaged in export, and the proceeds from selling the solar panels can be used to purchase goods and services not produced locally. Whether trade is regional or international often depends on accidents of history. Trade between a California homeowner installing solar panels and an Iowa firm manufacturing them is trade within a nation; trade between a French homeowner installing solar panels and a German manufacturer providing them is called international trade, even if the goods move the same distance.

Trade entails costs. Most obviously, there are the costs of transporting the goods and services from one location to another. The plumber has to drive to your house, continuing the example from above. Trade will only occur if the benefits to the participants exceed the costs. Because transport requires energy, an increase in energy costs will tend to reduce the extent of trade, all else being equal.

Energy is a good desired not for its own sake but because of the benefits from goods and services it helps to produce. Its widespread role in production of virtually all goods and services has led energy economist Robert Bradley to term it “the master resource.”<sup>64</sup> There are two ways in which energy can be traded. First, it can be transmitted directly. There are high costs to current methods of transmission over long distances, although high voltage direct current may be promising for future applications. Second, energy can be incorporated into a good or service that is more easily traded.<sup>65</sup> Aluminum production, for example, requires

---

64. ROBERT BRADLEY, *ENERGY: THE MASTER RESOURCE* (2004).

65. This fundamental insight is part of the Hecksher-Ohlin model of trade. *See generally* WILLIAM T. BOGART, *THE ECONOMICS OF CITIES AND SUBURBS* (1998) (presenting a textbook exposition of the Hecksher-Ohlin model and its application to trade among cities within the U.S.).

large amounts of energy.<sup>66</sup> Energy is more difficult to transmit than aluminum. Thus, aluminum production tends to occur near large quantities of energy; for example, U.S. aluminum production was traditionally located close to hydropower resources in the northwestern U.S. A more recent example is the growth of server farms, which consume considerable energy powering and cooling large numbers of computers. The output of these operations consists of digital signals transmitted via fiber optic lines, which can be moved at lower costs than electricity. Because of trade, inexpensive aluminum and cloud computing services are available even in areas that lack large quantities of cheap electrical generating capacity.

Economies in any location export goods and services that they can produce inexpensively relative to other economies. This is known as *comparative advantage*, and it is the fundamental concept used to analyze trade. Comparative advantage is based on a given set of resources, prices, and technologies and can change if any of those factors change. A carbon tax, for example, will make carbon-based, energy-intensive production less advantageous relative to other energy sources. Similarly, a change in technology that makes backyard steel mills economically viable will change the pattern of trade.<sup>67</sup>

A change in technology (or other factor affecting comparative advantage) will not affect all metropolitan areas equally. Economist Edward Glaeser, in a study of how Boston has continued to thrive despite multiple changes in its economic base, emphasizes the role of a flexible and well-educated workforce in promoting resilience.<sup>68</sup> Because most production requires a minimum scale to be efficient, cities do not produce every good, but instead engage in trade. A policy-driven (carbon tax) or technology-driven (continued development of alternative energy sources) change in energy production will not revoke this fundamental economic truth.

---

66. See The Aluminum Association, Energy Policy Position, <http://www.aluminum.org/Content/NavigationMenu/TheIndustry/GovernmentPolicy/Energy/default.htm> (last visited Nov. 24, 2009).

67. Installing backyard steel mills that were not economically viable was part of China's policy in the Great Leap Forward of the late 1950s. DAVID BACHMAN, BUREAUCRACY, ECONOMY, AND LEADERSHIP IN CHINA: THE INSTITUTIONAL ORIGINS OF THE GREAT LEAP FORWARD 4 (1991) ("[T]he Great Leap was one of the great disasters in the history of the People's Republic.").

68. Edward L. Glaeser, *Reinventing Boston: 1630-2003*, 5 J. ECON. GEOGR. 119 (2005). He has made a similar argument with respect to New York. Edward L. Glaeser, *The Reinventive City*, CITY JOURNAL, July 13, 2009, available at [http://www.city-journal.org/2009/nytom\\_reinventive-city.html](http://www.city-journal.org/2009/nytom_reinventive-city.html).

## II. REJECTING COMPARATIVE ADVANTAGE

Nobel laureate Paul Samuelson once described the theory of comparative advantage that underlies the economic analysis of trade as an insight from economic theory that is both nontrivial and non-obvious.<sup>69</sup> It is certainly not obvious in the green jobs literature, since green jobs reports routinely treat comparative advantage as false and view trade as a harm, rather than a benefit, to trade partners.<sup>70</sup> This is problematic for two reasons. First, voluntary trade produces net benefits or it would not occur.<sup>71</sup> Measures to restrict trade will thus be costly. Second, the assumption that trade is a net loss to an economy is hidden within the green jobs literature, not stated openly. As a result, the policies stated as intended to promote environmental and employment goals are also policies designed to reverse long-standing public policies in favor of increasing trade without openly debating the issue.

The green jobs literature often simply asserts that green jobs are not subject to comparative advantage and will be distributed abundantly everywhere. For example, the Center for American Progress (“CAP”) reports that green jobs will be created “in every region and state of the country.”<sup>72</sup> Similarly, the Conference of Mayors takes pains to describe with an illusory precision in a fourteen-page appendix how the green jobs will be distributed among all metropolitan areas and “are not restricted to any specific location, so cities and their metro areas across the country can and are expected to compete to attract this job growth.”<sup>73</sup> The UNEP report argues that comparative advantage should not apply: “Public policy can and should seek to minimize disparities among putative winners and losers that arise in the transition to a green economy, and avoid these distinctions becoming permanent features” by protecting workers and communities that are dependent on non-green industries and companies from the consequences.<sup>74</sup>

---

69. MICHAEL SZENBERG ET AL., PAUL SAMUELSON: ON BEING AN ECONOMIST 44 (2005).

70. We focus on three studies that have received considerable attention. See CTR. FOR AM. PROGRESS, GREEN RECOVERY: A PROGRAM TO CREATE GOOD JOBS AND START BUILDING A LOW-CARBON ECONOMY (2008), available at [http://www.americanprogress.org/issues/2008/09/pdf/green\\_recovery.pdf](http://www.americanprogress.org/issues/2008/09/pdf/green_recovery.pdf) [hereinafter CAP]; U.S. CONFERENCE OF MAYORS, U.S. METRO ECONOMIES: CURRENT AND POTENTIAL GREEN JOBS IN THE U.S. ECONOMY (2008), available at <http://www.usmayors.org/pressreleases/uploads/GreenJobsReport.pdf> [hereinafter MAYORS]; U.N. ENV'T PROGRAMME, GREEN JOBS: TOWARDS DECENT WORK IN A SUSTAINABLE, LOW-CARBON WORLD (2008), available at [http://www.unep.org/labour\\_environment/PDFs/Green\\_jobs/UNEP-Green-Jobs-Report.pdf](http://www.unep.org/labour_environment/PDFs/Green_jobs/UNEP-Green-Jobs-Report.pdf) [hereinafter UNEP].

71. This does not mean that every exchange that is made is optimal in a global sense or even in a personal sense. We have all made decisions that we later regretted, but at the time we made the decision to engage in an exchange, we believed it to be the best decision based on our preferences at that time.

72. CAP, *supra* note 11, at 5.

73. MAYORS, *supra* note 11, at 18, app. at 20–33.

74. UNEP, *supra* note 11, at 4. To its credit, the UNEP report does also note that:

[T]here is also a potential contradiction between renewables as a global source of jobs

Even looking only at the reports' internal descriptions of green industries, it is questionable whether or not these predictions of uniform benefits are accurate, since these reports do recognize at times that green industries are not currently uniformly distributed. For example, a third of current world production of solar photovoltaic ("PV") cells and wind turbines are located in Germany.<sup>75</sup> The UNEP report notes disapprovingly that this has come about in part because Germany has followed "low wage strategies" in producing solar equipment.<sup>76</sup> The assertion of "low" wages in Germany would come as a shock to employers in Germany and to most employees around the world, as Germany is one of the higher labor cost economies.<sup>77</sup> In any event, as a result of this market dominance, any effort to cause a rapid increase in PV installations will have to involve German firms if it is to succeed.

A look at the wind power industry may be instructive. Supported by subsidies and renewable energy mandates, net wind power generation grew 35% from 2008 to 2009 (January-April).<sup>78</sup> In the absence of a "Buy American" law, a company investing in wind turbines should either seek to maximize profits for shareholders (in the case of publicly-traded energy companies) or, at least, minimize costs (in the case of municipal utilities or coops). Only one, admittedly very important, U.S. firm, GE Wind (ranked #4) was listed among the top ten manufacturers of wind turbines from 1995 to 2004.<sup>79</sup> Other countries represented included Germany (three companies), Spain and Denmark (two each), India, and Japan.<sup>80</sup> The top four firms (Vestas, Gamesa, Enercon, and GE Wind) remain major players today.<sup>81</sup> In 2008 Steve Sawyer, Secretary General of the Global Wind Energy Council, ominously predicted: "One of the big issues is to prepare for the onslaught of relatively inexpensive Chinese turbines onto the world market."<sup>82</sup> When investing in a major wind

---

and renewables as part of national competitive economic strategies. Although this does not have to be a zero-sum game, a stellar export performance by a handful of countries does imply more limited opportunities elsewhere on the planet.

*Id.* at 9.

75. *Id.* at 96.

76. *Id.* at 98.

77. *Rest of the World Is Catching Up with U.S. Manufacturing Wages*, MANUFACTURING & TECH. NEWS, Jan. 4, 2006, at 5, available at <http://www.allbusiness.com/human-resources/compensation-salary/854351-1.html> (estimating the average manufacturing compensation in 2004 as \$23.17 per hour in the U.S. compared to \$32.53 per hour in Germany).

78. ENERGY INFO. ADMIN., TOTAL ELECTRIC POWER INDUSTRY SUMMARY STATISTICS (Aug. 2009), available at <http://www.eia.doe.gov/cneaf/electricity/epm/tablees1b.html>.

79. BTM CONSULT APS, TEN YEAR REVIEW OF THE INTERNATIONAL WIND POWER INDUSTRY 1995-2004, at 2 (2005).

80. Anca D. Hansen & Lars H. Hansen, *Wind Turbine Concept Market Penetration over 10 Years (1995-2004)*, 10 WIND ENERGY 81, 89-90 (2007).

81. Trevor Sievert, WindFair, Industry News: China—Top Wind Turbine Manufacturer in 2009?, <http://www.windfair.net/press/4193.html> (last visited Nov. 24, 2009). India's Suzlon is also mentioned as a major manufacturer in 2009. *Id.*

82. *Id.* Total current Chinese turbines exports are zero. *Id.*

energy purchase, an energy company may be hard-pressed to pick GE Wind turbines versus turbines manufactured by foreign competitors. While Americans applaud efforts to turn rust-belt locations (such as abandoned steel mills) into wind farms in order to create jobs,<sup>83</sup> foreign companies are well-positioned to control a significant portion of the market for large wind turbines. Assembly of foreign turbines in the U.S. will provide jobs, but most of the profits and patent royalties likely will go to the foreign companies.<sup>84</sup>

Regardless of whether local content strategies are attainable, however, the green jobs literature uniformly regards them as desirable. For example, CAP touts the domestic content aspects of its program as a plus: “In general, about 22 percent of total household expenditures will go to imports. With the green infrastructure investment program, only about 9 percent purchases imports. This is a critical benefit of a green economic recovery program . . . .”<sup>85</sup> Similarly, the UNEP report concludes that green jobs’ high local content is desirable since local content means “a more equitable distribution of wealth since the money saved is invested back into the local economy.”<sup>86</sup>

Even if the U.S. were to be purely self-sufficient, there would still be trade because of the differences in comparative advantage across the country. Changes in the price or technology of energy production will have effects that vary depending on how energy is currently produced.<sup>87</sup> A review of current patterns of electrical generation in the U.S. by economists Michael Cragg and Matthew Kahn confirms the substantial variation within the country.<sup>88</sup> Consider, for example, the difference

---

83. Renee Morway, *New York Steel Mill Undergoes Transformation, Now Is a Clean Wind Energy Farm*, ASSOC. CONTENT, May 24, 2007, [http://www.associatedcontent.com/article/257473/new\\_york\\_steel\\_mill\\_undergoes\\_transformation\\_pg2.html?cat=8](http://www.associatedcontent.com/article/257473/new_york_steel_mill_undergoes_transformation_pg2.html?cat=8). This project apparently uses U.S.-made wind turbines, but at a cost of \$4.5 million per turbine, the temptation to use turbines produced by an established foreign company is evident. *Id.*

84. Large wind turbines are especially tempting for off-shore wind projects, such as an attempt to put wind mills in Lake Erie. See Randy Roguski, *Cleveland Wants to Be First to Have Offshore Wind Farm in Lake Erie*, CLEVELAND.COM, Dec. 8, 2008, available at [http://blog.cleveland.com/business/2008/12/click\\_here\\_to\\_view\\_the.html](http://blog.cleveland.com/business/2008/12/click_here_to_view_the.html). An analysis of the iPod illustrates how the country of assembly (China) captures only a fraction of the economic value compared to the country that controls the intellectual property (U.S.). See GREG LINDEN ET AL., WHO CAPTURES VALUE IN A GLOBAL INNOVATION SYSTEM? THE CASE OF APPLE'S IPOD (2007), available at <http://repositories.cdlib.org/pcic/403>.

85. CAP, *supra* note 11, at 11. (No citation is provided for this incredibly precise measure of hugely complex portions of economic activity.)

86. UNEP, *supra* note 11, at 136.

87. There are political consequences to these differences. See Andrew P. Morriss, *Litigating to Regulate: Massachusetts v. Environmental Protection Agency*, CATO SUPREME COURT REVIEW 193, 211–12 (2006–2007) (noting pattern of low carbon emitting, high renewable energy producing states supporting greater federal regulation of carbon dioxide emissions).

88. Michael I. Cragg & Matthew E. Kahn, *Carbon Geography: The Political Economy of Congressional Support for Legislation Intended to Mitigate Greenhouse Gas Production* 23 (Nat'l Bureau of Econ. Research, Working Paper No. 14963, 2009), available at [http://mek1966.googlepages.com/cragg\\_kahn\\_5\\_7\\_09.pdf](http://mek1966.googlepages.com/cragg_kahn_5_7_09.pdf).

between Idaho and Indiana. In Idaho 78% of electricity is generated using hydropower, 15% using natural gas, and only 1% using coal.<sup>89</sup> Indiana generates 95% of its electricity using coal and 1% using natural gas.<sup>90</sup> Thus, the two states have very different levels of carbon emissions, and their economies would fare quite differently under a move to using less coal. Even states that are neighbors can have very different situations. Vermont, according to Cragg and Kahn, has the lowest carbon emissions of any state, as it generates over 90% of its electricity using nuclear power (71%) and hydropower (20%).<sup>91</sup> New Hampshire, with only about half of its power coming from those two sources, is a higher emitter of carbon.<sup>92</sup>

The anti-trade attitude embedded throughout the green jobs literature is part of a larger criticism of the global economy. The UNEP report is among the most explicit in stating its overall anti-trade agenda. The report argues:

Highly complex production, shipping, and retailing networks have emerged on an increasingly global scale, with varied impacts on employment, wage levels, and the economic viability of communities and regions. . . . Ultimately, a more sustainable economic system will have to be based on shorter distances and thus reduced transportation needs. This is not so much a technical as a fundamental systemic challenge.<sup>93</sup>

The UNEP report goes on to argue that globalization is a particular problem with respect to food production, claiming that:

[T]here are many farmers' organizations, NGOs, and others in civil society who regard the existing global food system as fundamentally unsustainable and who propose a more radical change of course—a course that recognizes that the traditional knowledge and skills of farmers are the key to solving the major problems of the existing food system and to meet the challenges of increasing demand.<sup>94</sup>

The report contrasts this with the vision of the World Bank and World Trade Organization (“WTO”), “who view the present liberalized and increasingly global food system as providing a path from poverty for hundreds of millions of rural dwellers, but who nonetheless recognize that it is a system that needs to do much more in order to become truly environmentally and socially sustainable.”<sup>95</sup>

---

89. *Id.* at 23.

90. *Id.*

91. *Id.* at 24.

92. *Id.* at 23.

93. UNEP, *supra* note 11, at 162.

94. *Id.* at 223.

95. *Id.*

The romantic view of traditional knowledge and happy peasants does not square with the historical record. Prior to 1800 most of the world lived in what economic historian Gregory Clark has termed “the Malthusian economy,” in which standards of living barely changed over millennia.<sup>96</sup> Much of the developing world still does live in a Malthusian economy.<sup>97</sup> Indeed, by the 1950s and 1960s, traditional agriculture, even in the developed world, seemed destined to lose the battle to feed the masses in many parts of the developing world. This led to dire predictions about coming famines that would inevitably decimate populations.<sup>98</sup> However, it was the Green Revolution—a distinctly nontraditional form of agriculture—that saved the day. Not only has the Green Revolution helped reduce hunger and malnutrition in developing countries, it has also saved more land from conversion in the developing world than has been set aside in all the areas that have been fully or partly set aside for conservation.<sup>99</sup> A major part of the Green Revolution was the application of more energy, embodied in fertilizers and improved seeds, to agriculture.<sup>100</sup>

Despite citing U.N. statistics that show that per capita food production has increased by 25% and that real food prices have fallen by 40% over the last 40 years, the UNEP report nonetheless sees an equivalence in the two perspectives, warning that as population increases, and diets move toward more meat and processed foods, global food production will need to triple by 2050 without using more land or water.<sup>101</sup> As noted earlier, it sees the increased labor efficiency of agriculture as a problem, concluding that:

The industrial model of agriculture, along with rich-country subsidies to agribusiness, has been identified as one of the primary drivers of urbanization globally, which then spurs a cycle of urban unemployment or underemployment when economic development does not keep up with the growing urban labor supply. Policies that keep farmers on their land, and facilitating green production practices, could generate employment and income both in agriculture and in non-farm occupations.<sup>102</sup>

---

96. GREGORY CLARK, A FAREWELL TO ALMS: A BRIEF ECONOMIC HISTORY OF THE WORLD 40 (2007).

97. *Id.* at 3.

98. *See, e.g.*, PAUL R. EHRLICH, THE POPULATION BOMB (1968); WILLIAM PADDOCK & PAUL PADDOCK, FAMINE 1975!: AMERICA'S DECISION: WHO WILL SURVIVE? (1967).

99. *See* INDUR M. GOKLANY, THE IMPROVING STATE OF THE WORLD: WHY WE'RE LIVING LONGER, HEALTHIER, MORE COMFORTABLE LIVES ON A CLEANER PLANET 161–63 (2007).

100. *See* Norman E. Borlaug, 1970 Nobel Peace Prize Laureate, Lecture: The Green Revolution Revisited and the Road Ahead (Sep. 8, 2000), available at [http://nobelprize.org/nobel\\_prizes/peace/articles/borlaug/borlaug-lecture.pdf](http://nobelprize.org/nobel_prizes/peace/articles/borlaug/borlaug-lecture.pdf) (summarizing the history of the Green Revolution).

101. UNEP, *supra* note 11, at 224.

102. *Id.*

This assertion does not square with historical experience. All countries that have enjoyed rising standards of living have seen a shift in their economies such that they are less dependent on the agricultural sector in terms of its contribution to the economy and total employment.<sup>103</sup>

The point is not simply that trade is beneficial to human welfare, a point on which the economic evidence is considerable. The problem is that the green jobs literature fails to acknowledge that its anti-trade assumptions are contested.<sup>104</sup> By burying critical assumptions on which exist considerable contradictory evidence and which are inconsistent with existing economic and trade policies (e.g., countries' commitments to the WTO),<sup>105</sup> the green jobs literature is smuggling in an economic policy under the guise of an environmental policy.

The anti-trade agenda is a fundamental tenet shared by many environmental organizations. Journalist Martin Wolf put it:

It is widely accepted among critics of market-driven globalization that it is inherently inimical to protection of the environment. To the extent that it is not inherently inimical, they argue, it is so *de facto*, because of the way the World Trade Organization operates. These propositions, though frequently repeated, suffer from a simple drawback: they are, where not altogether wrong, at least greatly exaggerated.<sup>106</sup>

The green jobs literature has embedded in it many of these strong anti-trade assumptions, which are contradicted by both economic theory and the experience of the world economy. The collapse of long distance trade is one of the main indicators of the dramatic decline in the quality of life resulting from the end of the Western Roman Empire.<sup>107</sup> As the World Bank explains, "trade spurs growth and growth spurs trade."<sup>108</sup> The economic success stories of countries emerging from poverty, such as China and Vietnam, come from exploiting comparative advantage via world trade, not remaining inward-looking.<sup>109</sup> Success in achieving autarky that is benign is an article of faith among the policy advocates we

---

103. See, e.g., Goklany, *supra* note 40, at 109.

104. Although anti-trade philosophy is enthusiastically practiced in North Korea under its Juche method of economic organization. See Juche Idea Study Group of England, <http://www.korea-dpr.com/users/jjisge/> (compiling links to documents on the benefits of this method of anti-trade organization).

105. Sean Higgins, 'Buy American' Policy Now Law as Critics Fear Global Reaction, INVESTOR'S BUS. DAILY, Feb. 17, 2009, at A1.

106. MARTIN WOLF, WHY GLOBALIZATION WORKS 188 (2004). Wolf demolishes the link between trade and environmental problems. *Id.* at 188-94.

107. BRYAN WARD-PERKINS, THE FALL OF ROME AND THE END OF CIVILIZATION 87-117 (2005).

108. WORLD BANK, WORLD DEVELOPMENT INDICATORS (2006), [http://devdata.worldbank.org/wdi2006/contents/Section6\\_1.htm](http://devdata.worldbank.org/wdi2006/contents/Section6_1.htm).

109. *Id.*

analyze. This central assumption needs to be clearly debated before accepting the green jobs literature's policy recommendations.